

Chapter 4

Surveying the Watershed to Inventory Your Critical Area

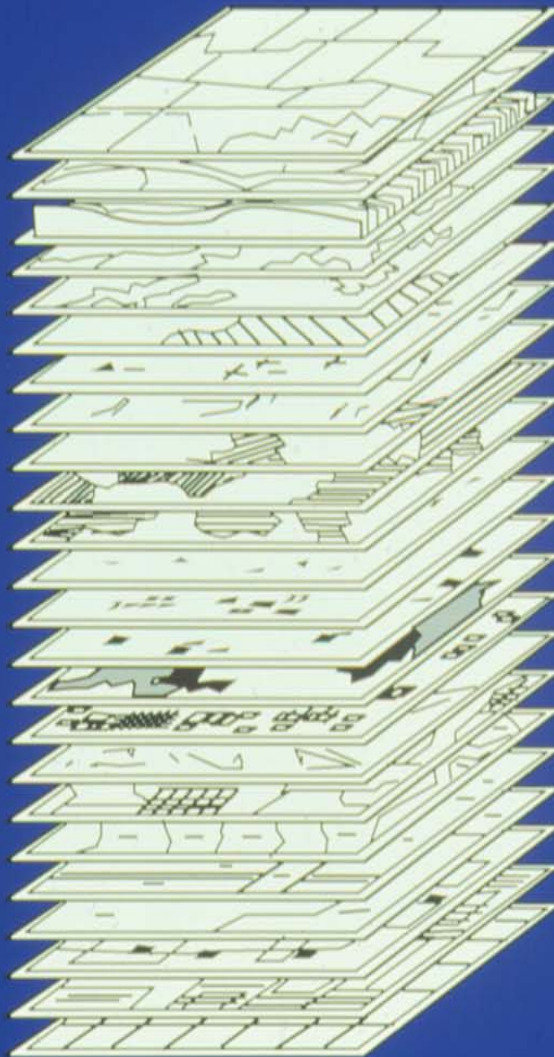
Objectives

- 1) Survey the Watershed to refine the Critical Area
- 2) Refine the list of known and suspected pollutants, sources and causes
- 3) To locate the Sources of pollution on a Watershed Map
- 4) Quantify the Sources of pollution
- 5) To move the Steering and Technical Committees to a position of knowledge

Primary Data Collection

- Topographic Map
- Hydrology
- Roads
- Soil Map
- Land Use
- Political Jurisdictions

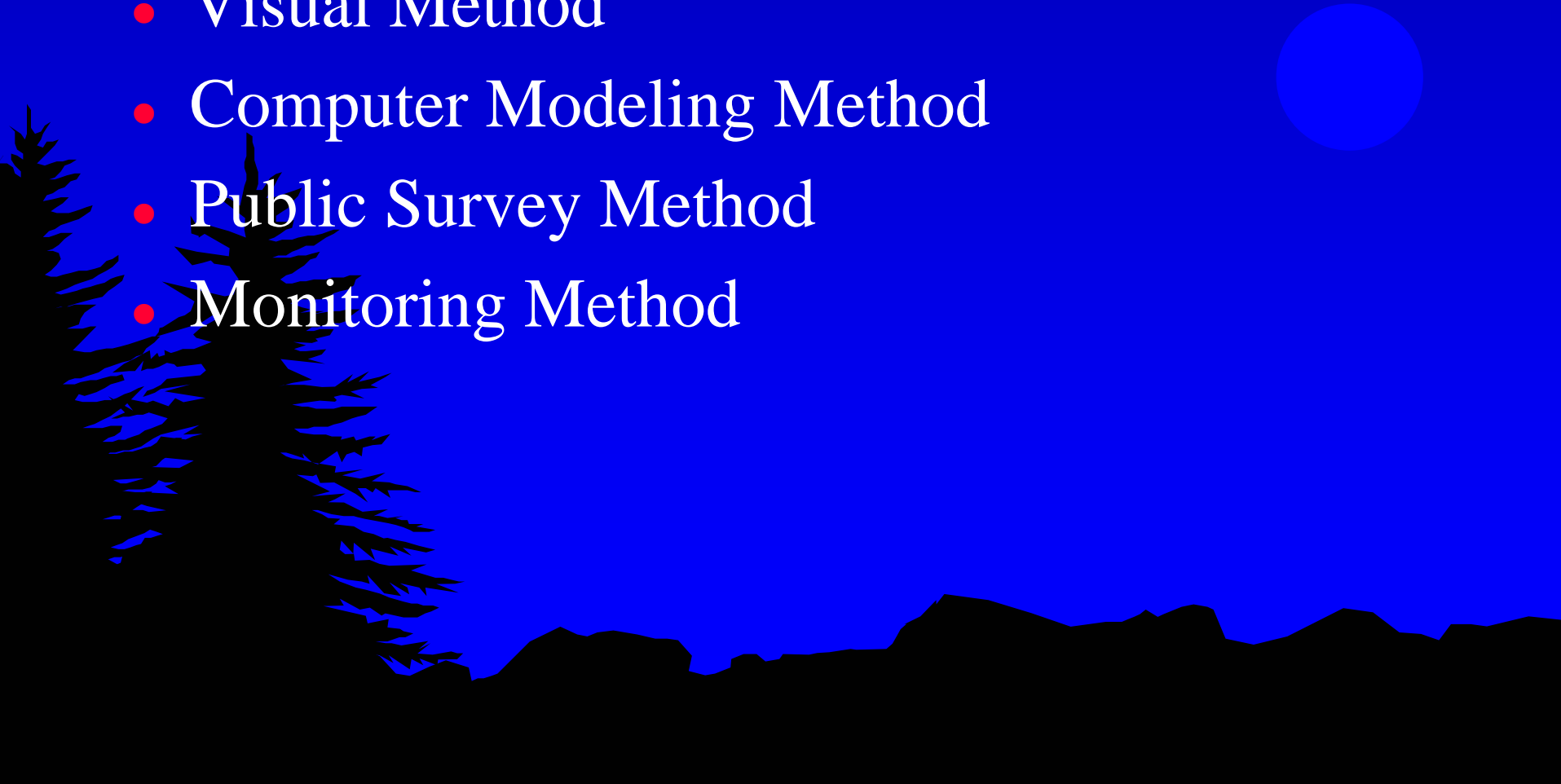
GIS LAYERS



BASE MAPS
LAND USE/COVER INVENTORY
TOPOGRAPHY/BATHYMETRY
HYDROLOGY
WETLANDS
ENVIRONMENTAL CONCERN AREAS
UNIQUE FEATURES (ARCHEOLOGY, HISTORY)
EROSION/RECESSION RATES
SEDIMENT DEPOSITION AREAS
SURFACE SOIL TYPES
GEOLOGIC STRATIFICATIONS
GROUNDWATER SAMPLING SITES
CONTAMINATION SITES
INTAKES AND DISCHARGES
100/500 YEAR FLOOD ZONES
STRUCTURE INVENTORY
BASE FLOOD ELEVATIONS
PROPERTY BOUNDARIES
LAND VALUES
CENSUS TRACTS
POLITICAL BOUNDARIES
PERMIT LOCATIONS
PROJECT DESIGN FILES
COORDINATE REFERENCE SYSTEMS

What Methods Are Available For Inventorying the Critical Area?

- Visual Method
- Computer Modeling Method
- Public Survey Method
- Monitoring Method



Visual Method

- 1) Walk, drive, and/or canoe
- 2) Technical Committee, Steering Committee, Local Stakeholders
- 3) Take lots of photographs
- 4) Standardized data sheets by sources



Most watershed groups have used an inventory sheet that includes information such as:

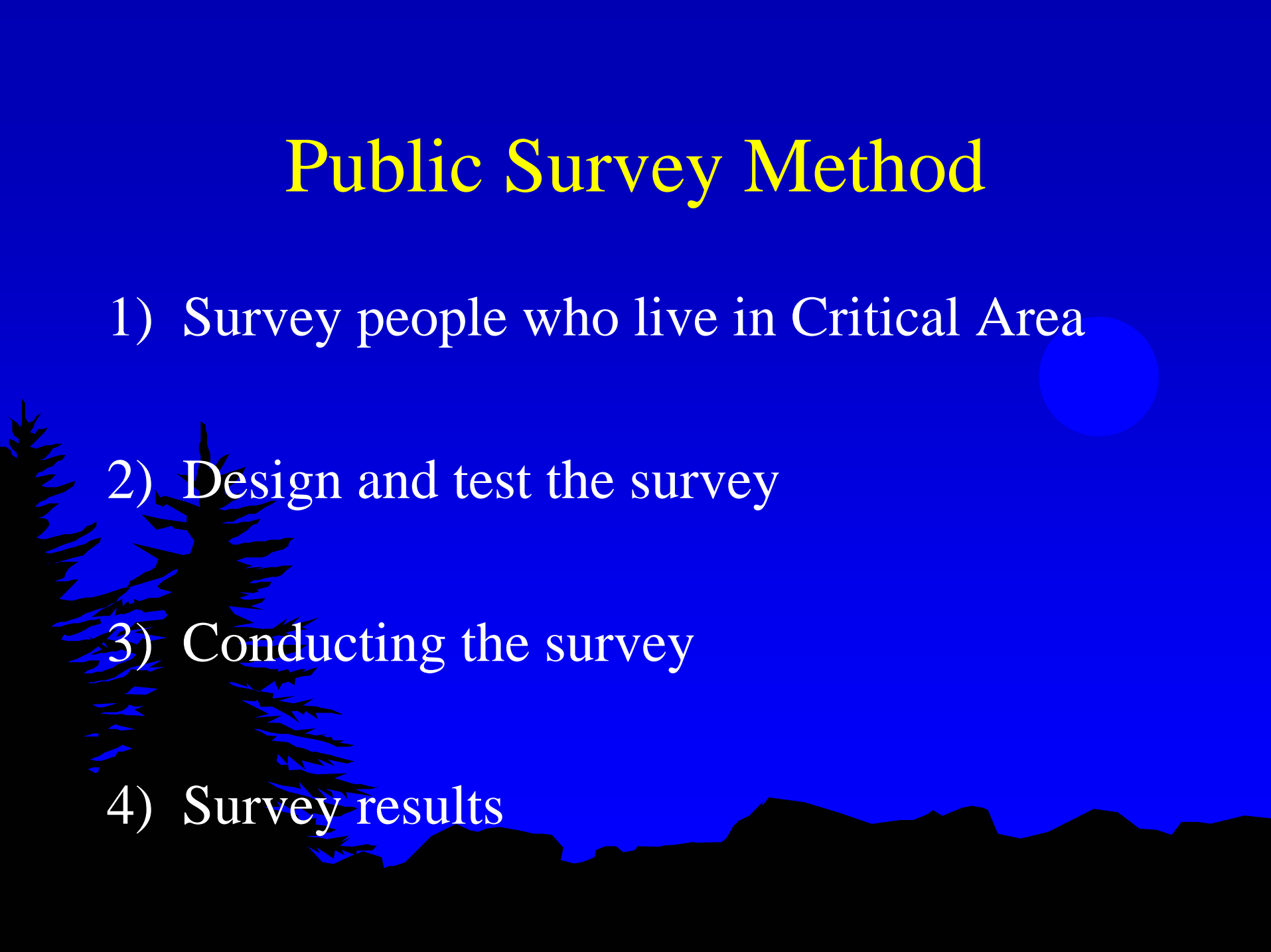
- Land Use
- The condition of the stream bank vegetation
- Amount of canopy(i.e., shade)
- The slope of the bank
- The stability of the stream bank
- In-stream water quality indicators such as nuisance algal growth
- Stream bed composition
- The condition of road-stream crossings
- Storm water or drainage pipes discharging into the stream

Computer Modeling Method

- 1) Simulate real-world conditions
- 2) Predict alternative scenarios



Public Survey Method

- 1) Survey people who live in Critical Area
 - 2) Design and test the survey
 - 3) Conducting the survey
 - 4) Survey results
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Monitoring Method

- 1) Habitat Monitoring
- 2) Chemical Water
Quality Monitoring
- 3) Hydrologic Monitoring



What is Done With Information That Was Collected?

- 1) Update the list of known and suspected
Pollutants
- 2) Update the list of known and suspected
Sources
- 3) Quantify the Sources

Example Watersheds Sources – Following the Inventory

Pollutants	Sources	Causes
Nutrients(P and N) (k)	Livestock in stream (k)	Uncontrolled Access (k)
	Failing septic systems (s)	Improperly sited, designed, and/or maintained septic systems (s)
	Residential fertilizer use (k)	Improper usage

Products From the Critical Area Inventory

Based on the Inventory of the Critical Area:

- 1) Updated list of verified Pollutants
- 2) Updated list of known Sources
- 3) The number of the Sources
- 4) The Location of the Sources on the Watershed Map
- 5) A display of the data in tabular form
- 6) A brief summary of the method(s) used to conduct the inventory

